

### AMENDMENTS TO THE CLAIMS

1-84. (Canceled)

85. (Currently Amended) A computer system for initializing a continuous glucose sensor, the computer system comprising:

a sensor data receiving module that receives sensor data from the substantially continuous glucose sensor via a receiver, including one or more sensor data points;

a reference data receiving module that receives reference data from a reference glucose monitor, including one or more reference data points;

a data matching module that forms one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

a stability determination module that determines a stability of the continuous glucose sensor in real-time, wherein said stability determination module evaluates a sensitivity associated with the continuous glucose sensor.

86. (Previously Presented) The computer system of claim 85, wherein said stability determination module evaluates one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

87. (Previously Presented) The computer system of claim 85, further comprising an interface control module that provides output to the user based on a stability of said sensor.

88. (Previously Presented) The computer system of claim 87, wherein said output from said interface control module comprises at least one of a numeric estimated glucose value, an indication of directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

89. (Previously Presented) The computer system of claim 85, wherein said reference data receiving module is adapted to receive sensor data from a blood glucose test.

90. (Previously Presented) The computer system of claim 85, wherein said reference data receiving module is adapted to receive reference data from an internal reference glucose monitor that is housed integrally with said computer system.

91. (Currently Amended) A method for initializing a substantially continuous glucose sensor, the method comprising:

receiving sensor data from a substantially continuous glucose sensor, including one or more sensor data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

providing output reflective of said sensor data after a predetermined level of stability has been determined, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating a sensitivity associated with the continuous glucose sensor.

92. (Previously Presented) The method of claim 91, wherein determining a stability of the substantially continuous glucose sensor comprises waiting a predetermined time period between about one minute and about six weeks.

93. (Currently Amended) ~~The method of claim 91, further comprising A method for initializing a substantially continuous glucose sensor, the method comprising:~~

receiving sensor data from a substantially continuous glucose sensor, including one or more sensor data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data;

providing output reflective of said sensor data after a predetermined level of stability has been determined; and

receiving reference data from a reference glucose monitor, including one or more reference data points and providing at least one matched data pair by matching reference glucose data to substantially time corresponding sensor data, and-wherein the step of determining a stability of the substantially continuous glucose sensor comprises evaluating said at least one matched data pair.

94. (Previously Presented) The method of claim 91, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating one of pH, oxygen, hypochlorite, interfering species R-value, baseline drift, baseline offset, and amplitude.

95. (Previously Presented) The method of claim 91, wherein the step of providing output comprises providing at least one of an audible, visual, or tactile output to a user based on a stability of said sensor.

96. (Previously Presented) The method of claim 95, wherein the step of providing output based on a predetermined level of stability of said sensor comprises indicating at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

97. (Previously Presented) The method of claim 91, further comprising receiving reference data from a reference glucose monitor.

98. (Previously Presented) The method of claim 97, wherein receiving reference data from a reference glucose monitor comprises receiving a wired internal communication.

99. (Currently Amended) A system for initializing a continuous glucose sensor, comprising:

a sensor data module operatively linked to an implantable continuous glucose sensor and configured to receive sensor data from said sensor; and

a processor module associated with the sensor data module and the sensor data module and programmed to match reference data points with time-matched sensor data points to form a calibration set comprising at least one matched data pair, wherein the processor module is programmed to evaluate a stability of the implantable continuous glucose sensor, and wherein the processor module is further programmed to output information reflective of said sensor data after a predetermined level of stability has been determined, wherein said processor module is programmed to evaluate a sensitivity associated with the continuous glucose sensor.

100. (Previously Presented) The system of claim 99, wherein said predetermined level of stability is based on a time period since the implantable continuous glucose sensor was implanted.

101. (Previously Presented) The system of claim 99, wherein said processor module is programmed to evaluate one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

102. (Previously Presented) The system of claim 99, further comprising an output module associated with said processor module and programmed to control output of sensor data.

103. (Previously Presented) The system of claim 102, wherein said output of sensor data indicates at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

104. (Previously Presented) The system of claim 99, further comprising a reference input module configured to receive reference data from a blood glucose test, wherein the reference data comprises one or more reference data points.

105. (Previously Presented) The system of claim 99, further comprising a reference glucose monitor integral with the system and wherein the system further comprises a reference input module configured to receive an internal communication from the reference glucose monitor, wherein the internal communication comprises one or more reference data points.

106-175. (Canceled)

176. (Currently Amended) The computer system of claim 47585, wherein said stability determination module evaluates an amplitude and/or variability of the sensitivity.

177. (Currently Amended) ~~The computer system of claim 85, A computer system for initializing a continuous glucose sensor, the computer system comprising:~~

a sensor data receiving module that receives sensor data from the substantially continuous glucose sensor via a receiver, including one or more sensor data points;

a reference data receiving module that receives reference data from a reference glucose monitor, including one or more reference data points;

a data matching module that forms one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

a stability determination module that determines a stability of the continuous glucose sensor in real-time, wherein said stability determination module evaluates a level of oxygen.

178. (Previously Presented) The computer system of claim 85, further comprising an interface control module comprising alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

179. (Previously Presented) The computer system of claim 85, further comprising a processor module configured to predict one or more glucose values at one or more future points in time.

180. (Previously Presented) The computer system of claim 85, further comprising an interface control module configured to send the sensor data to an insulin pump.

181. (Previously Presented) The computer system of claim 180, wherein the interface control module is configured to send the sensor data to the insulin pump only when a stability determination module determines a predetermined level of stability of the continuous sensor.

182. (Canceled)

183. (Currently Amended) The method of claim ~~182~~<sup>91</sup>, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating an amplitude and/or variability of the sensitivity.

184. (Currently Amended) ~~The method of claim 91, A method for initializing a substantially continuous glucose sensor, the method comprising:~~

receiving sensor data from a substantially continuous glucose sensor, including one or more sensor data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

providing output reflective of said sensor data after a predetermined level of stability has been determined, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating a level of oxygen.

185. (Previously Presented) The method of claim 91, wherein providing output comprises alerting a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

186. (Previously Presented) The method of claim 91, further comprising predicting one or more glucose values at one or more future points in time.

187. (Previously Presented) The method of claim 91, wherein providing output comprises sending the sensor data to an insulin pump.

188. (Previously Presented) The method of claim 187, wherein providing output comprises sending the sensor data to the insulin pump only when a predetermined level of stability determination module determines a stability of the continuous sensor.

189. (Canceled)

190. (Currently Amended) The system of claim 18999, wherein said processor module evaluates-is programmed to evaluate an amplitude and/or variability of the sensitivity.

191. (Currently Amended) ~~The system of claim 85,~~ A system for initializing a continuous glucose sensor, comprising:

a sensor data module operatively linked to an implantable continuous glucose sensor and configured to receive sensor data from said sensor; and

a processor module associated with the sensor data module and the sensor data module and programmed to match reference data points with time-matched sensor data points to form a calibration set comprising at least one matched data pair, wherein the processor module is programmed to evaluate a stability of the implantable continuous glucose sensor, and wherein the processor module is further programmed to output information reflective of said sensor data after a predetermined level of stability has been determined, wherein said processor module ~~evaluates-is~~ programmed to evaluate a level of oxygen.

192. (Currently Amended) The system of claim 8599, further comprising an output module comprising alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

193. (Currently Amended) The system of claim 8599, wherein the processor module is configured to predict one or more glucose values at one or more future points in time.

194. (Currently Amended) The system of claim 8599, further comprising an output module configured to send the sensor data to an insulin pump.

195. (Previously Presented) The system of claim 194, wherein the output module is configured to send the sensor data to the insulin pump only when a stability determination module determines a predetermined level of stability of the continuous sensor.

196. (Currently Amended) A continuous glucose sensor system, comprising:

a continuous glucose sensor configured to continuously measure a concentration of glucose in a host; and

a computer system configured to receive sensor data associated with the concentration of glucose in the host and configured to process the sensor data to provide displayable sensor data, wherein the computer system is configured to output the sensor data only after a predetermined level of stability of the continuous glucose sensor has been determined, wherein the computer system is configured to provide at least one matched data pair by matching reference glucose data to substantially time corresponding sensor data, and wherein the computer system is configured to determine a stability of the continuous glucose sensor by evaluating said at least one matched data pair.

197. (Previously Presented) The system of claim 196, wherein the computer system is configured output the sensor data to a display only after a predetermined level of stability of the continuous glucose sensor has been determined.

198. (Previously Presented) The system of claim 196, wherein the computer system is configured output the sensor data to an insulin pump only after a predetermined level of stability of the continuous glucose sensor has been determined.

199. (Previously Presented) The system of claim 196, wherein the computer system is configured output alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event only after a predetermined level of stability of the continuous glucose sensor has been determined.

200. (New) The computer system of claim 177, further comprising an interface control module that provides output to the user based on a stability of said sensor.

201. (New) The computer system of claim 200, wherein said output from said interface control module comprises at least one of a numeric estimated glucose value, an indication of directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

202. (New) The computer system of claim 177, wherein said reference data receiving module is adapted to receive sensor data from a blood glucose test.

203. (New) The computer system of claim 177, wherein said reference data receiving module is adapted to receive reference data from an internal reference glucose monitor that is housed integrally with said computer system.

204. (New) The computer system of claim 177, wherein said stability determination module evaluates an amplitude and/or variability of the sensitivity.

205. (New) The computer system of claim 177, further comprising an interface control module comprising alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

206. (New) The computer system of claim 177, further comprising a processor module configured to predict one or more glucose values at one or more future points in time.

207. (New) The computer system of claim 177, further comprising an interface control module configured to send the sensor data to an insulin pump.

208. (New) The computer system of claim 207, wherein the interface control module is configured to send the sensor data to the insulin pump only when a stability determination module determines a predetermined level of stability of the continuous sensor.

209. (New) The method of claim 93, wherein determining a stability of the substantially continuous glucose sensor comprises waiting a predetermined time period between about one minute and about six weeks.

210. (New) The method of claim 93, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating one of pH, oxygen, hypochlorite, interfering species R-value, baseline drift, baseline offset, and amplitude.

211. (New) The method of claim 93, wherein the step of providing output comprises providing at least one of an audible, visual, or tactile output to a user based on a stability of said sensor.

212. (New) The method of claim 211, wherein the step of providing output based on a predetermined level of stability of said sensor comprises indicating at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

213. (New) The method of claim 93, wherein receiving reference data from a reference glucose monitor comprises receiving a wired internal communication.

214. (New) The method of claim 93, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating an amplitude and/or variability of the sensitivity.

215. (New) The method of claim 93, wherein providing output comprises alerting a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

216. (New) The method of claim 93, further comprising predicting one or more glucose values at one or more future points in time.

217. (New) The method of claim 93, wherein providing output comprises sending the sensor data to an insulin pump.

218. (New) The method of claim 217, wherein providing output comprises sending the sensor data to the insulin pump only when a predetermined level of stability determination module determines a stability of the continuous sensor.

219. (New) The method of claim 184, wherein determining a stability of the substantially continuous glucose sensor comprises waiting a predetermined time period between about one minute and about six weeks.

220. (New) The method of claim 184, wherein the step of providing output comprises providing at least one of an audible, visual, or tactile output to a user based on a stability of said sensor.

221. (New) The method of claim 220, wherein the step of providing output based on a predetermined level of stability of said sensor comprises indicating at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

222. (Previously Presented) The method of claim 184, further comprising receiving reference data from a reference glucose monitor.

223. (New) The method of claim 222, wherein receiving reference data from a reference glucose monitor comprises receiving a wired internal communication.

224. (New) The method of claim 184, wherein determining a stability of the substantially continuous glucose sensor comprises evaluating an amplitude and/or variability of the sensitivity.

225. (New) The method of claim 184, wherein providing output comprises alerting a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

226. (New) The method of claim 184, further comprising predicting one or more glucose values at one or more future points in time.

227. (New) The method of claim 184, wherein providing output comprises sending the sensor data to an insulin pump.

228. (New) The method of claim 227, wherein providing output comprises sending the sensor data to the insulin pump only when a predetermined level of stability determination module determines a stability of the continuous sensor.

229. (New) The system of claim 191, wherein said predetermined level of stability is based on a time period since the implantable continuous glucose sensor was implanted.

230. (New) The system of claim 191, further comprising an output module associated with said processor module and programmed to control output of sensor data.

231. (New) The system of claim 230, wherein said output of sensor data indicates at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

232. (New) The system of claim 191, further comprising a reference input module configured to receive reference data from a blood glucose test, wherein the reference data comprises one or more reference data points.

233. (New) The system of claim 191, further comprising a reference glucose monitor integral with the system and wherein the system further comprises a reference input module configured to receive an internal communication from the reference glucose monitor, wherein the internal communication comprises one or more reference data points.

234. (New) The system of claim 191, wherein said processor module is programmed to evaluate an amplitude and/or variability of the sensitivity.

235. (New) The system of claim 191, further comprising an output module comprising alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event.

236. (New) The system of claim 191, wherein the processor module is configured to predict one or more glucose values at one or more future points in time.

237. (New) The system of claim 191, further comprising an output module configured to send the sensor data to an insulin pump.

238. (New) The system of claim 237, wherein the output module is configured to send the sensor data to the insulin pump only when a stability determination module determines a predetermined level of stability of the continuous sensor.

239. (New) A continuous glucose sensor system, comprising:

a continuous glucose sensor configured to continuously measure a concentration of glucose in a host; and

a computer system configured to receive sensor data associated with the concentration of glucose in the host and configured to process the sensor data to provide displayable sensor data, wherein the computer system is configured to output the sensor data only after a predetermined level of stability of the continuous glucose sensor has been determined by evaluating a sensitivity associated with the continuous glucose sensor.

240. (New) The system of claim 239, wherein the computer system is configured output the sensor data to a display only after a predetermined level of stability of the continuous glucose sensor has been determined.

241. (New) The system of claim 239, wherein the computer system is configured output the sensor data to an insulin pump only after a predetermined level of stability of the continuous glucose sensor has been determined.

242. (New) The system of claim 239, wherein the computer system is configured output alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event only after a predetermined level of stability of the continuous glucose sensor has been determined.

243. (New) A continuous glucose sensor system, comprising:

a continuous glucose sensor configured to continuously measure a concentration of glucose in a host; and

a computer system configured to receive sensor data associated with the concentration of glucose in the host and configured to process the sensor data to provide displayable sensor data, wherein the computer system is configured to output the sensor

data only after a predetermined level of stability of the continuous glucose sensor has been determined by evaluating a level of oxygen.

244. (New) The system of claim 243, wherein the computer system is configured output the sensor data to a display only after a predetermined level of stability of the continuous glucose sensor has been determined.

245. (New) The system of claim 243, wherein the computer system is configured output the sensor data to an insulin pump only after a predetermined level of stability of the continuous glucose sensor has been determined.

246. (New) The system of claim 243, wherein the computer system is configured output alerts configured to warn a user of a present and/or upcoming hypoglycemic and/or hyperglycemic event only after a predetermined level of stability of the continuous glucose sensor has been determined.